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Terms	Documents
L5 and mtbe	2

**Database:**

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<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
<i>DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L8</u>	L5 and mtbe	2	<u>L8</u>
<u>L7</u>	L6 and methyl-t-butylether	1	<u>L7</u>
<u>L6</u>	4311851	16	<u>L6</u>
<u>L5</u>	L4 and methyl pivalate	6	<u>L5</u>
<u>L4</u>	L3 and ester	9169	<u>L4</u>
<u>L3</u>	L2 and alcohol	11004	<u>L3</u>
<u>L2</u>	L1 and boron trifluoride	14328	<u>L2</u>
<u>L1</u>	olefin or ether	583023	<u>L1</u>

END OF SEARCH HISTORY

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 2 of 2 returned.**☐ 1. Document ID: US 20010041808 A1

L8: Entry 1 of 2

File: PGPB

Nov 15, 2001

PGPUB-DOCUMENT-NUMBER: 20010041808

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010041808 A1

TITLE: Production of esters

PUBLICATION-DATE: November 15, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Mozeleski, Edmund J.	Califon	NJ	US	
Beck, Carl R.	Greenwell Springs	LA	US	
Nadler, Kirk C.	Houston	TX	US	
Schlosberg, Richard H.	Bridgewater	NJ	US	

US-CL-CURRENT: 560/233; 560/232, 560/240

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 2. Document ID: US 4894188 A

L8: Entry 2 of 2

File: USPT

US-PAT-NO: 4894188

DOCUMENT-IDENTIFIER: US 4894188 A

TITLE: Process for producing fatty acids and their ester derivatives

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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Terms	Documents
L5 and mtbe	2

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Terms	Documents
L4 and methyl pivalate	6

**Database:**

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**Search:**

L5

[Refine Search](#)[Recall Text](#)[Clear](#)**Search History****DATE:** **Tuesday, August 13, 2002**   [Printable Copy](#)   [Create Case](#)

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<i>DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L5</u>	L4 and methyl pivalate	6	<u>L5</u>
<u>L4</u>	L3 and ester	9169	<u>L4</u>
<u>L3</u>	L2 and alcohol	11004	<u>L3</u>
<u>L2</u>	L1 and boron trifluoride	14328	<u>L2</u>
<u>L1</u>	olefin or ether	583023	<u>L1</u>

END OF SEARCH HISTORY

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 6 of 6 returned.**☐ 1. Document ID: US 20010041808 A1

L5: Entry 1 of 6

File: PGPB

Nov 15, 2001

PGPUB-DOCUMENT-NUMBER: 20010041808

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010041808 A1

TITLE: Production of esters

PUBLICATION-DATE: November 15, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Mozeleski, Edmund J.	Califon	NJ	US	
Beck, Carl R.	Greenwell Springs	LA	US	
Nadler, Kirk C.	Houston	TX	US	
Schlosberg, Richard H.	Bridgewater	NJ	US	

US-CL-CURRENT: 560/233; 560/232, 560/240

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KIMC</a>	<a href="#">Draw Desc</a>	<a href="#">Image</a>
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☐ 2. Document ID: US 5451675 A

L5: Entry 2 of 6

File: USPT

US-PAT-NO: 5451675

DOCUMENT-IDENTIFIER: US 5451675 A

TITLE: Process for the preparatuon of 3-alkoxymethyl cephalosporin derivatives

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KIMC</a>	<a href="#">Draw Desc</a>	<a href="#">Image</a>
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☐ 3. Document ID: US 5223641 A

L5: Entry 3 of 6

File: USPT

US-PAT-NO: 5223641

DOCUMENT-IDENTIFIER: US 5223641 A

TITLE: Carboxylic acid mixtures and process for producing the same

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KIMC</a>	<a href="#">Draw Desc</a>	<a href="#">Image</a>
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☐ 4. Document ID: US 4894188 A

L5: Entry 4 of 6

File: USPT

US-PAT-NO: 4894188

DOCUMENT-IDENTIFIER: US 4894188 A

TITLE: Process for producing fatty acids and their ester derivatives

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw Desc	Image
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☐ 5. Document ID: US 3691230 A

L5: Entry 5 of 6

File: USPT

US-PAT-NO: 3691230

DOCUMENT-IDENTIFIER: US 3691230 A

TITLE: PROCESS FOR PRODUCING CARBOXYLIC ACIDS AND ESTERS

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw Desc	Image
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☐ 6. Document ID: WO 200147861 A1 AU 200126045 A US 2001041808 A1

L5: Entry 6 of 6

File: DWPI

Jul 5, 2001

DERWENT-ACC-NO: 2001-496692

DERWENT-WEEK: 200154

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TITLE: Production of ester e.g. methyl pivalate used as pesticides, involves reacting olefin or ether with carbon monoxide, Lewis acid composition, adding alcohol to product composition, separating acid product from ester

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC	Draw Desc	Clip Img	Image
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Terms	Documents
L4 and methyl pivalate	6

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L5: Entry 4 of 6

File: USPT

DOCUMENT-IDENTIFIER: US 4894188 A

TITLE: Process for producing fatty acids and their ester derivativesAbstract Text (1):

Fatty acid and their derivatives are simply produced by reacting an olefin, carbon monoxide and water or reacting an alcohol or its derivative and carbon monoxide in the presence of a hydrogen fluoride catalyst and thermally decomposing the resulting reaction product in the presence of a lower hydrocarbon or a lower halogenated hydrocarbon.

Brief Summary Text (1):

This invention relates to a process for producing fatty acids or their derivatives by reacting an olefin, carbon monoxide and water or an alcohol or its derivative and carbon monoxide in the presence of hydrogen fluoride catalyst.

Brief Summary Text (2):

The reactions for obtaining a fatty acid having one more carbon atoms than the starting compound or a derivative of said fatty acid by reacting an olefin, carbon monoxide and water or reacting an alcohol or its derivative and carbon monoxide in the presence of an acid catalyst such as sulfuric acid, hydrogen fluoride, boron trifluoride or the like are extensively known as Koch reaction or Koch-like reaction. It is known that, when an olefin is used as starting material and hydrogen fluoride is used as the catalyst in these reactions, it is preferable to react the olefin and carbon monoxide by using substantially anhydrous hydrogen fluoride as the catalyst and then to add an equimolar or excessive quantity, to the reacted carbon monoxide, of water to produce fatty acid. It is also known that, when an alcohol or its derivative is used as the starting material, fatty acid or its derivative can be produced in a higher yield and under milder conditions by adding 1-15% by weight of water to the hydrogen fluoride in advance. That is, the reaction products of these reactions contain water in almost all cases. In such cases, the content of water is usually 1-50% by weight based on hydrogen fluoride. Since water forms a azeotropic mixture with a highest boiling point with hydrogen fluoride (hereinafter, the mixture is referred to as "hydrated catalyst") and water exhibits a strong affinity to fatty acid, it is difficult to separate the hydrated catalyst from the reaction product by merely heating the reaction product accumulated in a reactor vessel.

Brief Summary Text (3):

In order to solve such a problem, Japanese Patent Publication No. 35,722/71 proposes a process which comprises reacting an olefin with carbon monoxide, contacting the resulting reaction product with a hydrogen fluoride-water complex to give a mixture of hydrogen fluoride and a fatty acid-hydrogen fluoride complex, distilling the mixture to separate it into hydrogen fluoride and fatty acid-hydrogen fluoride complex, decomposing the fatty acid-hydrogen fluoride complex with an equimolar quantity of water and then recovering the fatty acid. However, the process involves quite complicated steps, and moreover it is expected that the concentration of fluorine remaining in the reaction product will be difficult to reduce to, for example, 0.05 moles or less per 1 mole of fatty acid merely by the process disclosed in the Japanese Patent Publication. Further, when an alcohol is used as a starting material, it is impossible to apply the process because it is not necessary to add water to the reaction product.

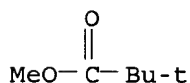
Brief Summary Text (5):

Thus, the invention consists in a process for producing fatty acids or their

=> s methyl pivalate/cn  
L3 1 METHYL PIVALATE/CN

=> d l3

L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS  
RN 598-98-1 REGISTRY  
CN Propanoic acid, 2,2-dimethyl-, methyl ester (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Pivalic acid, methyl ester (6CI, 7CI, 8CI)  
OTHER NAMES:  
CN Methyl 2,2-dimethylpropanoate  
CN Methyl 2,2-dimethylpropionate  
CN **Methyl pivalate**  
CN Methyl trimethylacetate  
FS 3D CONCORD  
MF C6 H12 O2  
CI COM  
LC STN Files: ANABSTR, BEILSTEIN\*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS,  
CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, DETHERM\*, GMELIN\*,  
HODOC\*, IFICDB, IFIPAT, IFIUDB, MSDS-OHS, NAPRALERT, SPECINFO,  
SYNTHLINE, TOXCENTER, USPATFULL  
(\*File contains numerically searchable property data)  
Other Sources: EINECS\*\*, NDSL\*\*, TSCA\*\*  
(\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

360 REFERENCES IN FILE CA (1967 TO DATE)  
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
360 REFERENCES IN FILE CAPLUS (1967 TO DATE)  
29 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=>

=> s 598-98-1/prep  
360 598-98-1  
2897488 PREP/RL  
L4 56 598-98-1/PREP  
(598-98-1 (L) PREP/RL)

=> s l4 and mtbe  
3047 MTBE  
L5 2 L4 AND MTBE

=> d 1-2 ibib abs hitstr

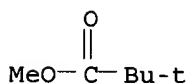
L5 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 2001:841178 CAPLUS  
DOCUMENT NUMBER: 136:104196  
TITLE: Computational study of the liquid phase acid-catalyzed  
carbonylation of **MTBE**  
AUTHOR(S): Haubein, Ned C.; Broadbelt, Linda J.  
CORPORATE SOURCE: Dep. Chem. Eng., Northwestern Univ., Evanston, IL,  
60208-3120, USA  
SOURCE: Preprints of Symposia - American Chemical Society,  
Division of Fuel Chemistry (2001), 46(2), 571-572  
CODEN: PSADFZ; ISSN: 1521-4648  
PUBLISHER: American Chemical Society, Division of Fuel Chemistry  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A process to produce Me pivalate was developed using a detailed kinetic  
model based on first principles to elucidate factors controlling product  
yield and selectivity in acid-catalyzed Koch carbonylation of **MTBE**  
. A solvation model was used to adjust gas phase thermodyn. parameters for  
solvent effects, e.g., hydrogen bonding and solvent polarity. The  
decompn. of **MTBE** to methanol and a tert-Bu cation is the  
rate-detg. step in the mechanism. The strength of the acid has an  
important effect on stabilization of the transition state thus lowering  
the activation energy.

IT **598-98-1P**, Methyl pivalate  
RL: IMF (Industrial manufacture); **PREP (Preparation)**  
(mechanism and kinetics of liq. phase acid-catalyzed carbonylation of  
**MTBE** from modeling and expt. study)

RN 598-98-1 CAPLUS

CN Propanoic acid, 2,2-dimethyl-, methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 2001:489348 CAPLUS  
DOCUMENT NUMBER: 135:78550  
TITLE: Production of esters  
INVENTOR(S): Mozeleski, Edmund J.; Schlosberg, Richard H.; Beck,  
Carl R.; Nadler, Kirk C.  
PATENT ASSIGNEE(S): Exxon Chemical Patents Inc., USA  
SOURCE: PCT Int. Appl., 58 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001047861	A1	20010705	WO 2000-US35467	20001228



W: AE, AL, AM, AT, AU, BA, BB, BG, BR, BY, CA, CH, CR, CU,  
CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,  
IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,  
MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,  
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ,  
BY, KG, KZ, MD, RU, TJ, TM  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 2001041808 A1 20011115 US 2000-750567 20001226

PRIORITY APPLN. INFO.: US 1999-173504P P 19991229

OTHER SOURCE(S): MARPAT 135:78550

AB Disclosed is a process for the prodn. of esters. In particular, the process includes contacting an olefin or an ether with carbon monoxide and an acid compn. comprising BF<sub>3</sub>.2ROH to form a product compn., adding an alc. to the product compn., and sepg. the BF<sub>3</sub>.2ROH from the ester. The sepd. BF<sub>3</sub>.2ROH may then be recycled to the reaction unit.

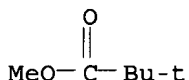
IT 598-98-1P, Methyl pivalate

RL: IMF (Industrial manufacture); PREP (Preparation)

(prodn. of di- or tri-alkyl esters by carbonylation of olefins with acid catalysts)

RN 598-98-1 CAPLUS

CN Propanoic acid, 2,2-dimethyl-, methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=>